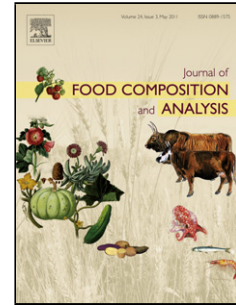


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Special Issue: “Bioaccessibility of food components and contaminants”

Dynamic gastrointestinal digestion of grape pomace extracts: bioaccessible phenolic metabolites and impact on human gut microbiota

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Highlights

- The two GP extracts modulated the metabolism of the colonic microbiota *in vitro*
- The greatest changes were detected during chronic feeding
- A human intestinal bacteria able to degrade phenolic compounds was isolated
- Simgi® is a useful model to study the bioaccessibility of food components

Abstract

Grape pomace is a winery by-product rich in polyphenols and dietary fibre, two food constituents in whose bioaccessibility gut microbiota is implicated. To overcome the limitations of *in vivo* studies concerning difficult access to proximal regions of the colon, this paper reports, for the first time, the *in vitro* colonic digestion of grape pomace extracts (GPEs) using a dynamic gastrointestinal digestion model. Experiments consisted in the inoculation of the simgi® model with faecal microbiota from healthy volunteers, and further feeding of the system with a single (acute feeding of 700 mg) and continuous (chronic feeding of 700 mg/day; 14 days) dose of GPE. Two independent experiments with faecal microbiota from two volunteers (#1 and #2) were carried out. Results were determined in terms of microbial functionality [phenolic metabolites, short-chain fatty acids (SCFAs) and

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